Comments by Robin Davis, Licensed Professional Geologist

To compliment the Citizen's Education Project comment regarding desertification and deleterious effects similar to the Owen's Valley, I offer the following additional comments:

- The BARCASS study implies to support a massive groundwater extraction project proposed by SNWA by:
  - Using data from very wet and non-representative years and providing a subsequent abundance of groundwater.
  - Setting up the model to assume that all water from precipitation and snowmelt is available for infiltration and recharge for every time step, which were set at one-month intervals. In doing so, the model assumes that the soil water storage capacity will never be exceeded in any time step, thus no run-off occurs. Actual field observations, and desert-wise common sense, tells us this is rarely the case and that more run-off occurs in one hour much less one month.
  - Relying on minimum isotope tracer data to reveal an unprecedented discovery: that the intermontane basin aquifers are significantly connected and therefore provide an abundance of groundwater. The United States Environmental Protection Agency has discovered that isotope tracer studies using only one isotope can yield unreliable results on large scales, such as the area evaluated in the BARCASS study.
  - Presenting results that show more harm than good for SNWA by overestimating available groundwater and contaminating their very supply by saltwater intrusion. In other words, the regional adverse impact of groundwater extraction for the short-term benefit for a few in Nevada not worth the long-term risk.
  - Using the model PRISM, which the USGS themselves discounted in previous reports as being inappropriate for use in Eastern Nevada and mountainous areas because it over-estimates precipitation.

- The BARCASS study is inadequately comprehensive because it fails to consider all components of the hydrologic cycle. As documented in desert areas world-wide, further desertification causes loss of critical soil-binding vegetation and subsequent overdevelopment of very fine-grained particles including silt and alkali dust. As these fine particles are airborne, the "dust storms" result in intolerably devastating air quality region-wide and downwind in other states like Utah. Under the circumstances of abundant groundwater reported in the BARCASS study, groundwater extraction that causes such severe and widespread deleterious effects on neighboring states and non-profiteers is not responsible reporting or resource management.

- Also absent from consideration in the BARCASS study, and the hydrologic cycle for that matter, is the regional effect that aggressive groundwater extraction would have on the hydrologic dynamics of the Great Salt Lake in Utah. The BARCASS study revealed that the intermontane basin aquifers are much more connected than previously thought As such, significant groundwater extraction, as proposed by SNWA, would draw groundwater down to a point where the existing saltwater wedge around the Great Salt Lake expands. The expanding salt water wedge would cause widespread aquifer contamination, especially westward, and which may ultimately be contaminated water SNWA extracts.
- Geologic faults are mentioned in the BARCASS study and recognized for properties as a conduit to transmit water. The study's Figure 16, although conceptual, accurately characterizes the basic hydro- and geologic regime of concern. The normal faults that form this Basin and Range Geologic Province result in surface springs that are vital to the vegetation that binds soil and to riparian habitats, collectively contributing to fending off a creation of a "wasteland."